

In re Patent Application of:
Kendall Young, et al.

Serial No. 10/824,449

Attachment 1



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120 USPQ 192
In re VENNER AND BOWSER
U.S. Court of Customs and Patent Appeals

Appl. No. 6391

Decided December 19, 1958

262 F2d 91

Headnotes

PATENTS

[1] Patentability — Anticipation — Patents — On copending applications (► 51.2219)

It is proper to predicate rejection of claims solely on admitted state of prior art as disclosed in applicants' patent issued on application copending with parent application of instant application.

[2] Patentability—Aggregation or combination—Of old elements (► 51.159)

New combination of old elements is patentable under certain circumstances; however, elements must cooperate in such manner as to produce new, unobvious, and unexpected result; combination must amount to invention.

[3] Patentability—Invention—In general (► 51.501)

Patentability—Utility (► 51.75)

In absence of invention, utility and novelty are not sufficient to support allowance of claims.

[4] Patentability — Invention — Definition (► 51.503)

Invention is difficult to define positively.

[5] Patentability—Invention—In general (► 51.501)

It is not invention to produce device within realm of performance of skilled mechanic in ordinary progress of producing device required to effectuate given result.

[6] Patentability—Invention—In general (► 51.501)

It is not invention to broadly provide mechanical or automatic means to replace manual activity which accomplished same result.

[7] Patentability—Subject matter for patent monopoly — Mental processes (► 51.609)

Patentability cannot be predicated upon mental step.

[8] Patentability—Evidence of—Commercial success—Doubtful cases (► 51.4557)

Commercial success is of no moment unless patentability is in doubt.

Particular Patents

Particular patents —Molding Pistons

Venner and Bowser, Apparatus for Molding Trunk Pistons, claims 1, 2, 5, 8, 10, 13 and 20 of

application refused.

Case History and Disposition

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Appeal from Board of Appeals of the Patent Office.

Application for patent of William M. Verner and Percy L. Bowser, Jr., Serial No. 309,966; Patent Office Division 3. From decision rejecting claims 1, 2, 5, 8, 10, 13, and 20, applicants appeal. Affirmed.

Attorneys

JOHN H. BRUNINGA, St. Louis, Mo., and RICHARD G. RADUE, Washington, D.C., for appellants.

CLARENCE W. MOORE (GEORGE C. ROEMING of counsel) for Commissioner of Patents.

Judge

Before O'CONNELL, Acting Chief Judge, and WORLEY, RICH, and MARTIN, Associate Judges.

Opinion Text

Opinion By:

MARTIN, Judge.

This is an appeal from the decision of the Board of Appeals of the Patent Office affirming the final rejection by the examiner of claims 1, 2, 5, 8, 10, 13 and 20, all of the claims remaining, of application serial No. 309,966, for "Apparatus for Molding Trunk Pistons." The subject matter of the claims on appeal was disclosed in a parent application of the same inventors, serial No. 789,124, filed December 1, 1947, and copending with the instant application.

The appealed claims relate to a permanent mold casting apparatus for molding trunk pistons of aluminum and magnesium alloys wherein the mold comprises two external horizontally movable outer mold sections, a pair of internal horizontally displaceable side core sections which form the interior surfaces of the piston, and a vertically acting middle core section withdrawable from between the side core sections so as to permit the latter to collapse towards one another, thereby releasing the molded solidified piston. The outer mold sections in assembled position form a gate into which the molten metal may be fed by gravity to fill the mold cavity. The middle core section is positioned by a piston type fluid motor which withdraws the said section when actuated. The alleged invention resides in the provision of "time-controlled means" to actuate the said fluid motor in order to withdraw the middle core section at the proper time after pouring the metal into the mold so as to prevent slumping of the metal or excessive contraction thereof on the core members. The "time-controlled means" are initiated by the molder by depressing a foot operated

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switch immediately after pouring the molten metal into the gate.

Claim 1, which is regarded as representative of the claims on appeal, reads as follows:

1. An apparatus for molding trunk pistons of aluminum and magnesium alloys having relatively high crystallization shrinkages and coefficients of thermal expansion, such piston embodying a head having a relatively thick cross-section and a cylindrical skirt of relatively thin cross-section provided with inwardly extending wrist pin bosses of relatively thick cross-section, comprising, a pair of separable mold sections shaped to the outside of the piston and provided with a gate at the top adapted to cast the piston with the head up, a sectional core shaped to the inside of the piston and embodying a middle section movable downwardly between and below side sections which are shaped to form the bosses and are freely movable laterally into the space when vacated by said middle section, power-operated means connected to move said middle section downwardly below said side sections, time-controlled means set to the period between the completion of the pouring of the metal in the mold and solidification of the metal of the piston therein, means controlled by said time-controlled means and controlling said power-operated means in order to move said middle section downwardly at the end of said period to release it from the casting and to permit the side sections to freely move laterally away from the casting, and means accessible to the molder when pouring for initiating the starting of said time-controlled means after the completion of

such pouring.

The references relied on are:

Nichols, 1,925,496, Sept. 5, 1933.
Stern, 2,145,956, Feb. 7, 1939.
Wagner, 2,190,496, Feb. 13, 1940.
Flammang et al., 2,204,407, June 11, 1940.
Waldie, 2,363,759, Nov. 28, 1944.
Venner et al., 2,588,898, Mar. 11, 1952.

Venner et al., a patent issued to the same inventors as those herein, was copending with appellants' parent application. The said patent discloses a permanent molding apparatus for aluminum alloy trunk pistons comprising exterior mold sections, side core parts, and a power operated central core part, which parts are said to "be of any suitable construction as shown in the various patents enumerated above." The admitted prior art disclosure included the Flammang et al. patent, discussed, infra. The claims of the Venner et al. patent set forth a multiple mold apparatus supported on a rotatable carrier, which is actuated by power operated means at the disposal of the molder to position the carrier and the molds together with their respective core sections for the alternate pouring and solidification steps.

The Flammang et al. reference relates to a trunk piston permanent molding machine of the same general class as applicants' including a pair of mold sections, two side core sections, and a center core section capable of being vertically withdrawn to permit inward movement of the side core sections and removal of the formed casting. Flammang et al. teach freeing the casting from the side core sections "as soon as the operator is satisfied that the casting has cooled to a sufficient state of hardness."

Stern discloses a die casting machine wherein molten metal is injected into the die cavity and a timer controls the operation of an ejector pin which pin ejects the casting from the die subsequent to the formation thereof and in timed sequence therewith.

The Waldie patent discloses a die casting machine for aluminum and other metals in which a timer is actuated to open the die and discharge the casting therefrom. No core is removed from the die; instead, the die members are merely separated from one another.

The Nichols reference discloses a permanent molding apparatus for the manufacture of castings from metal, such as cast iron. The core is retracted automatically from the mold "after the castings have solidified around the cores and before the castings begin to contract." The said mold is mounted on a rotatable carrier which moves intermittently to position each mold successively for pouring of the molten metal, core withdrawal, and ejection of the finished casting. The said patent discloses that:

* * * the amount of time which should elapse between the filling of the mold and the withdrawal of the cores depends upon the time required for chilling that portion of the casting adjacent the core sufficiently to solidify it. As this time is variable depending on the size of the casting and the material used it is necessary to vary the time required to pass between the stations. * * *

The Wagner patent shows a permanent molding apparatus for manufacturing engine blocks in which a plurality

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of core members are withdrawn from the mold automatically upon closing an electrical circuit.

The rejection of claims 1, 2, and 5 as "lacking invention over Venner et al. in view of either Stern or Waldie, when viewed in the light of the art as evidenced by Wagner and Nichols," was affirmed by the Board of Appeals. The basic features of these claims are found in claim 1 and the differences therefrom recited in the other enumerated claims do not patentably distinguish over the reference combination cited; accordingly, the patentability of these claims will be considered in connection with that of claim 1.

[1] Appellants object to the board's reliance on the Venner et al. patent, No. 2,588,898, as a reference since the said patent was co-pending with the parent application of that herein. The board, in its opinion on reconsideration, indicated that the rejection of those claims was predicated solely on the admitted state of the prior art as disclosed in said Venner et al. patent. We find no reversible error

in the use of such admissions. *In re Rishoi et al.*, 39 CCPA 1004, 197 F.2d 342, 94 USPQ 71 .

It was conceded by counsel for appellants at the hearing that the molding apparatus without the timing device and associated means to initiate the withdrawal of the middle core section after a predetermined period of time is not patentable over the prior art. Counsel further agrees that the power operated valve means for vertically *withdrawing* the middle core section when manually initiated is shown by the patents of record; therefore, it is unnecessary to further discuss the references in this respect.

However, appellants do contend that the basis for allowance of the appealed claims resides in the combination of the old permanent-mold structures together with a timer and solenoid which automatically actuates the known pressure valve system to release the inner core after a predetermined time has elapsed.

Appellants have submitted an affidavit showing commercial success of the device set forth and indicating those factors which they deem illustrative of the unobviousness of the recited combination. They argue that this new combination has reduced the number of defective pistons formed by permanent molding by 15% and has increased production 35%. It is further claimed that the reduction of defects is caused by the use of the timer in *withdrawing* the inner core at the exact time required to avoid slumping of the metal when the inner core is *withdrawn* too soon and cracking in the thin skirt portions thereof, when *withdrawn* too late. Appellants state that previous to their asserted invention, the molder by noting the color and sinking of the gate, guessed when to withdraw the center core and that this course of action caused the large percentage of defective pistons.

Further, appellants stress the importance of the claimed combination in particular relation to the aluminum and magnesium alloy piston molding art which they argue has peculiar problems not found in the molding of pistons with other metals. The affidavit states that "pistons when made of aluminum and magnesium alloys have high crystallization shrinkages and coefficients of thermal expansion. * * * The crystallization shrinkage must be compensated for by the proper design and gating. If that is not done then a serviceable piston casting will not be produced."

[2] Unquestionably a new combination of old elements is patentable under certain circumstances. However, we believe that this principle is subject to the conditions stated in the case of *In re Kaufman*, 39 CCPA 769, 1952 C.D. 85, 656 O.G. 279, 193 F.2d 331, 92 USPQ 141 , wherein the court stated at 774, 92 USPQ at 144:

* * * if a new combination of old elements is to be patentable, the elements must cooperate in such manner as to produce a new, unobvious, and unexpected result. It must amount to an invention. *In re Smith*, 34 CCPA 1007, 73 USPQ 394 , cited supra. In

[3] the absence of invention, utility and novelty are not sufficient to support the allowance of claims for a patent. *In re Levin*, 37 CCPA 791, 178 F.2d 945, 84 USPQ 232 ; *In re Hass et al.*, 31 CCPA 895, 141 F.2d 122,

[4] 60 USPQ 544 . It is trite to say that invention is difficult to define positively.

[5] However, we believe it to be a settled rule that it is not invention to produce a device which is within the realm of performance of a skilled mechanic in the ordinary progress of producing a device required to effectuate a given result.

[6] Furthermore, it is well settled that it is not "invention" to broadly provide a mechanical or automatic means to replace manual activity which has accomplished the same result. *In re Rundell*, 18 CCPA 1290, 48 F.2d 958, 9 USPQ 220 .

With respect to the paramount contention of appellants that the timing device of their combination establishes patentability, we are of the opinion that the prior art and the logical deductions

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of anyone skilled in the art would preclude the determination that the recitation of "time-controlled means set to the period between the completion of the pouring of the metal in the mold and solidification of the metal of the piston therein" constitutes "invention." The need for withdrawal of the middle core section upon solidification is recognized by Flammang et al.; Waldie and Stern teach the advantages of timing devices used in conjunction with pressure valves to cause the withdrawal of various parts at predetermined times after pouring in the operation of molding devices. Therefore it would be obvious to any person skilled in this art to equip the mold structure of Flammang et al. with

the timing devices of Waldie or Stern.

Appellants claim that because of the peculiar characteristics of aluminum and magnesium alloys it is imperative that the center core be *withdrawn* at exactly the right moment. Assuming this to be so, this precise moment must be determined by one who has the knowledge of the properties of the metals involved and can calculate the required time to produce those castings which will be devoid of defects. This determination involves the consideration of many variables including the composition of the raw material and the alloy formed, the melting temperature, the temperature of pouring the molten metals, the mechanical construction of the mold, the temperature gradient and the absolute temperatures within the mold, and the speed of pouring.¹

¹ These factors are recognized in the excerpt from "The Metallurgy of Aluminium and Aluminium Alloys," Robert I. Anderson, 1925, page 632, cited as an authority in the record before us.

[7] The timer itself does not compute the molding period. A mental process is invoked and the timer is set accordingly. Patentability cannot be predicated upon a mental step. In re Shao Wen Yuan, 38 CCPA 967, 188 F.2d 377, 89 USPQ 324 . It follows naturally that if the timers are employed the instantaneous reaction which appellants deem so important, would result. Furthermore, using a floor switch to activate the timer detracts from appellants' contention that the automatic timer relieves the operation from the mistakes and inertia of the human mind.

We are further of the opinion that the instant element recited herein as "means controlled by said time controlled means and controlling said power operated means" does not add patentability to this combination. Venner et al. together with the Nichols and Wagner patents show the automatic means to initiate withdrawal of a core from a piston molding apparatus; this would preclude applicants from predicating patentability on this feature. The fact that these references pertain to iron castings or engine blocks and other products does not prevent their use as references to show mechanical means for initiating the withdrawal of core members.

[8] Moreover, even though the use of the instant machine is asserted to have decreased the percentage of defective pistons cast and increased the rate of production thereof, these features alone do not create patentability. Commercial success is of no moment unless patentability is in doubt. In re Jaeger et al., 44 CCPA 767, 241 F.2d 723, 112 USPQ 477 . In the instant case, we find all the elements of appellants' combination in the prior art cited by Venner et al. together with Waldie, Stern, Nichols and Wagner.

Appellants have asserted that their alleged invention was not obvious to the many persons skilled in the instant art since for many years the industry "has relied on the molder's guess as to solidification." It is sufficient to say in answer to this argument that appellants' combination would not stop the guesswork. What did, was the more accurate determination of the proper molding period and the application of the prior art to utilize the knowledge thus obtained.

There is nothing in appellants' affidavit which bolsters their contention that this industry either recognized or was endeavoring to resolve the problem set forth; the mere fact that the percentage of defective pistons produced was deceased by the instant apparatus, after a long period of use of other devices, does not necessarily show that the combination at bar was unobvious. So far as it appears from this record, the number of defects produced by the use of prior art molding apparatus may have been merely nominal, and therefore, the said decrease would not be significant, nor would any need for change be apparent.

Therefore, we find no patentable distinctions recited over the prior art of record in claims 1, 2, or 5, and accordingly affirm the board's rejection of those claims.

Claims 8, 10, 13 and 20 differ from claim 1 in reciting a multiple mold apparatus and carrier therefor, the latter actuated by power-operated means at the disposal of the molder to move so as to position the several molds for the alternate pouring and solidification steps. The board affirmed the rejection of these claims as failing to patentably distinguish over the *claims* of Venner et al.,

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in view of the various secondary references cited above. The Venner et al. patent claims a "plurality of piston molds * * *, a carrier for said molds * * *, and power-operated mechanism under control of the molder at the molder's station for rapidly shifting said carrier and with it said molds * * * to positions: first contiguous the molder's station for pouring of the metal * * *, second away from the station for setting of the metal, and third back to the station for * * * removal of the casting * * * and

closing of the mold * * * for repouring." It would be considered obvious for any person in the piston molding art to equip the multiple mold apparatus thus defined by the claims of Venner et al. with time controlled means to withdraw the middle core section after a predetermined period for solidification, in accordance with the disclosures of the secondary references, as discussed hereinabove in connection with claim 1. Therefore, the rejection of claims 8, 10, 13 and 20 is *affirmed*.

For the above reasons, we *affirm* the decision of the Board of Appeals.

- End of Case -

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